Module code & Title: GENPP501-PYTHON PROGRAMMING FUNDAMENTALS

Date: 13/3/2025

Period: 8.30 AM-11.30 AM

DISTRICT COMPREHENSIVE ASSESSMENT_ 2024/2025

QUESTION PAPER / MARKING GUIDE

Sector: ICT AND MULTIMEDIA

RQF Level: 5

Trade: SOFTWARE DEVELOPMENT

Marks: ...../100

Duration: 3 Hours

This exam paper is composed of twenty-four (24) questions distributed in three sections (A, B, C). Follow the instructions given below, and answer the indicated questions in each section for a total of 100 marks.

Section **A**: Seventeen (17) questions, all are **compulsory**.	**55 marks**
Section **B**: Five (5) questions, choose and answer any three (3).	**30 marks**
Section **C**: Two (2) questions, choose and answer any one (1).	**15 marks**

Allowed materials: Blue pen or black pen, Ruler, Non programmable Calculator, Pencil.

SECTION A: Attempt all questions **(55marks)**

01 Which command is used to check the installed Python version? **(2 marks)**

a) python --version
b) python -v
c) py -check
d) check-python

Answer: a) python --version

02 Which of the following is an immutable data type in Python? **(2 marks)**

a) List
b) Dictionary
c) Tuple
d) Set

Answer: c) Tuple

03 Which Python module is used to work with file paths? **(3 marks)**
a) os
b) pathlib
c) sys
d) shutil

Answer: b) pathlib

04 Which keyword is used to define a function in Python? **(3 marks)**
a) def
b) function
c) define
d) fn

Answer: a) def

05 **A Python virtual environment is used to:** **(3 marks)**
a) Run Python faster
b) Keep dependencies isolated
c) Install multiple versions of Python
d) Encrypt Python scripts

Answer: b) Keep dependencies isolated

06 The _____ module provides specialized container datatypes such as OrderedDict and defaultdict. **(3 marks)**

Answer: collections

07 Which statement correctly opens a file in read mode? **(3 marks)**
a) file = open("data.txt", "r")
b) file = open("data.txt", "w")
c) file = open("data.txt", "a")
d) file = read("data.txt")

Answer: a) file = open("data.txt", "r")

08 Which function is used to delete a file in Python? **(2 marks)**
a) remove()
b) delete()
c) erase()
d) drop()

Answer: a) remove()

09 Which of the following is the correct syntax for defining a function in Python? **(3 marks)**
a) def myFunction:
b) function myFunction():
c) def myFunction():
d) create function myFunction()

Answer: c) def myFunction():

10 Which of the following correctly declares a Python list? **(3 marks)**

a) myList = {1, 2, 3, 4}
b) myList = [1, 2, 3, 4]
c) myList = (1, 2, 3, 4)
d) myList = <1, 2, 3, 4>

Answer: b) myList = [1, 2, 3, 4]

11 What will be the output of the following code? **(2 marks)**

```
x = 5
y = "10"
print(x + y)
```

a) 15
b) 510
c) TypeError
d) None

Answer: c) TypeError

12 Which of the following is the correct way to open a file in read mode? **(4 marks)**

a) file = open("data.txt", "r")
b) file = open("data.txt", "w")
c) file = open("data.txt", "a")
d) file = open("data.txt", "rw")

Answer: a) file = open("data.txt", "r")

13 In Python, indentation is optional when defining a function. **(3 marks)**

Answer: False

14 The **elif** statement is used in Python to check multiple conditions in an **if** statement. **(3 marks)**

Answer: True

15 A dictionary stores data in the form of key-value pairs and is declared using _____ brackets. **(3 marks)**

Answer: {}

16 How can you handle exceptions in Python? Provide an example. **(5 marks)**

Answer:

- Use try-except blocks to catch and handle errors.

```
try:
    x = 10 / 0
except ZeroDivisionError:
    print("Cannot divide by zero!")
```

17 Differentiate between a normal function and a lambda function in Python with an example. **(5marks)**

Answer:

- **Normal Function:** Uses def, has a name.
  e.g: def square(x):
  return x * x
- **Lambda Function:** Anonymous, single-expression function
  Eg: square = lambda x: x * x

Section B: Attempt any three (3) questions **(30marks)**

18 What are the four types of Python collections? Provide one example for each. **(10marks)**

Answer:

- **List** → Stores multiple values, e.g., fruits = ["apple", "banana", "cherry"].
- **Tuple** → Immutable ordered collection, e.g., coordinates = (10, 20).
- **Dictionary** → Key-value storage, e.g., user = {"name": "Alice", "age": 25}.
- **Set** → Stores unique values, e.g., unique_numbers = {1, 2, 3, 4}.

19 Write a Python function that takes a list of numbers and returns the sum of even numbers. **(10marks)**

Answer:

```
def sum_even(numbers):
    return sum(num for num in numbers if num % 2 == 0)

print(sum_even([1, 2, 3, 4, 5, 6]))  # Output: 12
```

20 Implement a Python program that removes duplicate elements from a given list while preserving the order. **(10marks)**

Answer:

```
def remove_duplicates(lst):
    return list(dict.fromkeys(lst))

print(remove_duplicates([1, 2, 2, 3, 4, 4, 5]))  # Output: [1, 2, 3, 4, 5]
```

21 Write a Python script to count the occurrences of each word in a given text file. **(10marks)**

Answer:

```
from collections import Counter

with open("sample.txt", "r") as file:
    words = file.read().split()

word_count = Counter(words)
print(word_count)
```

22 Write a Python program that demonstrates the use of a generator function to yield even numbers between 1 and 10. **(10marks)**

Answer:

```
def even_numbers():
    for num in range(1, 11):
        if num % 2 == 0:
            yield num

for number in even_numbers():
    print(number)
```

Section C: Attempt only one (1) question **(15marks)**

23 Write a Python program to create a text file, write “hello my classmates” in the file, then read and print the content. **(15marks)**

Answer:

```
# Writing to file
with open("example.txt", "w") as file:
    file.write("Hello, Python file handling!")

# Reading from file
with open("example.txt", "r") as file:
    print(file.read())
```

24 Write a Python program to check whether a given string is a palindrome. **(15marks)**

Answer:

```
def is_palindrome(s):
    return s == s[::-1]

print(is_palindrome("madam"))  # Output: True
print(is_palindrome("hello"))  # Output: False
```